

## **AQUATIC PESTICIDE USE IN NEW JERSEY – 2004**

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In 1983 the NJDEP Pesticide Control Program (PCP) implemented an Aquatic Pesticide Use Permit Program. The specific purpose of this program was to identify and control what pesticides are being applied to New Jersey's waterbodies. Recently, the PCP was able to gather data from Records of Actual Treatment (RAT) and compute the total amount of each aquatic pesticide used during the aquatic permit season, which runs from April to October. Furthermore, this total usage has also been broken down into active ingredient by County and by Watershed Management Area.

All aquatic applicators are responsible for submitting their RAT forms to the department by November 15 of each treatment year. These records are then entered into the permits database, and checked for any errors or misapplications. Once corrected, the data is analyzed and the pounds of active ingredient used calculated for each treatment record. This data is then transposed to display the different permutations listed above.

Table 1 lists the chemicals and their amounts in pounds of active ingredient (A.I.) used during the 2004 Aquatic Pesticide Permit season. The most widely used trade names corresponding with these chemicals are also included.

Table 2 lists the chemicals and their A.I. amounts applied by county for the 2004 season.

Table 3 lists the chemicals and their A.I. amounts applied by Watershed Management Areas for the 2004 season. For more information on Watershed Management Areas, please visit <http://www.nj.gov/dep/watershedmgt>, or contact the NJDEP Division of Watershed Management.

This information will help us address the impacts, if any, of specific aquatic pesticides to the environment in a particular area, as well as track the use of these pesticides. We must however, keep in mind that aquatic ecosystems are extremely dynamic and may change significantly from year to year and this may effect the trend of such pesticide usage over time. Another factor is the adoption of IPM (Integrated Pest Management). One of the goals of the PCP is pesticide use reduction, and IPM is a tool that can be used to achieve this. Although aquatic IPM practices are currently few, many lake management associations have already incorporated some techniques into their management programs.

The following data has been gathered and charted, as there is a general interest in the trends of aquatic pesticide use for the control of aquatic weeds throughout the state of New Jersey. All information is based on permitted sites only.

**Table 1.** Compounds used during the 2004 Aquatic Pesticide Permit season and their amounts (pounds of active ingredient). The list of brand names consists of the most widely used products only, and is not intended to be comprehensive.

Active Ingredient	Brand Name Products	Total
2, 4-D	AquaKleen, Navigate	683.10
Copper	Citrine Plus, Citrine Ultra, Captain	5,203.27
Copper Sulfate	Chem-One, Phelps-Dodge	130,067.60
Diquat	Reward	4,725.75
Endothall	Aquathol-K	2,185.19
Fluridone	Sonar AS, Avast AS	4,043.96
Glyphosate	Glypro, Rodeo	2,830.77
Imazapyr	Habitat	8.25
Sodium Carbonate (Hydrogen Dioxide)	GreenClean	124.20
Triclopyr	Renovate3	51.38
<b>Grand Total</b>		<b>149,923.47</b>

**Table 2.** Pesticide amounts (in pounds of active ingredient) used during the 2004 Aquatic Pesticide Permit season by county.

County	2, 4-D	Copper	Copper Sulfate	Diquat	Endothall	Fluridone	Glyphosate	Imazapyr	Sodium Carbonate	Triclopyr	Pounds of A.I.	Percent
Atlantic	254.10	77.87	55.44	115.08		4.00	100.00				<b>606.48</b>	<b>0.40%</b>
Bergen		148.48	46,351.70	93.63	145.77	25.20	50.63				<b>46,815.39</b>	<b>31.23%</b>
Burlington	181.50	538.03	378.58	383.78	11.84	52.21	103.82			9.75	<b>1,659.52</b>	<b>1.11%</b>
Camden		45.94	116.10	23.00		34.90	.38				<b>220.32</b>	<b>0.15%</b>
Cape May		7.56		2.50		4.28	173.63				<b>187.97</b>	<b>0.13%</b>
Cumberland							270.10				<b>270.10</b>	<b>0.18%</b>
Essex		464.82	8,651.23	67.21	6.35	.50	13.00				<b>9,203.10</b>	<b>6.14%</b>
Gloucester		118.26	173.25	400.50		.50	33.30				<b>725.81</b>	<b>0.48%</b>
Hudson											<b>0</b>	<b>0.00%</b>
Hunterdon		54.58	356.43	62.52	1.10	156.04	1.15				<b>631.81</b>	<b>0.42%</b>
Mercer		324.81	965.25	36.33		3.35					<b>1,329.73</b>	<b>0.89%</b>
Middlesex		72.27	232.16	21.46		.90	8.97				<b>335.75</b>	<b>0.22%</b>
Monmouth		2,061.26	4,747.67	91.90	298.09	5.80	82.82	3.00			<b>7,290.54</b>	<b>4.86%</b>
Morris		518.69	13,633.38	1,187.67	357.37	273.42	35.47	.01	124.20		<b>16,130.21</b>	<b>10.76%</b>
Ocean		80.66	58.81	27.20		72.68	211.35	3.00			<b>453.70</b>	<b>0.30%</b>
Passaic		83.38	10,724.86	539.37	98.98	120.93	1.34			18.75	<b>11,587.61</b>	<b>7.73%</b>
Salem				17.88			1,641.60				<b>1,659.48</b>	<b>1.11%</b>
Somerset		252.22	840.33	93.40	106.47	7.35	.62	2.00	.00	.00	<b>1,302.39</b>	<b>0.87%</b>
Sussex		127.13	41,718.90	1,441.41	1,100.05	3,271.34	79.12			15.38	<b>47,753.32</b>	<b>31.85%</b>
Union		26.67	784.89	24.09	25.33	6.30	19.30			7.50	<b>894.08</b>	<b>0.60%</b>
Warren	247.50	200.65	278.64	96.83	33.84	4.27	4.20	.25			<b>866.16</b>	<b>0.58%</b>
<b>Grand Total</b>	<b>683.10</b>	<b>5,203.27</b>	<b>130,067.60</b>	<b>4,725.75</b>	<b>2,185.19</b>	<b>4,043.96</b>	<b>2,830.77</b>	<b>8.25</b>	<b>124.20</b>	<b>51.38</b>	<b>149,923.47</b>	

**Table 3.** Pesticide amounts (in pounds of active ingredient) used during the 2004 Aquatic Pesticide Permit season by Watershed Management Area (WMA).  
 \*Note: Some records were omitted from this analysis as they incorporated several WMA's in a single treatment. This omission represents a very small percentage (0.11%) of the overall dataset.

WMA	2, 4-D	Copper	Copper Sulfate	Diquat	Endothall	Fluridone	Glyphosate	Imazapyr	Sodium Carbonate	Triclopyr	Pounds of A.I.	Percent
1	247.50	291.34	6,560.81	1,206.92	550.49	127.50	74.32	.25		12.00	<b>9,071.13</b>	<b>6.06%</b>
2		34.16	36,053.89	460.32	498.08	3,130.50	9.00			3.38	<b>40,189.33</b>	<b>26.83%</b>
3		195.02	11,004.55	651.62	359.97	190.77	13.19			18.75	<b>12,433.86</b>	<b>8.30%</b>
4		56.61	4,839.71	294.46	3.17	23.95	.88				<b>5,218.79</b>	<b>3.48%</b>
5		54.06	45,251.06	31.27	7.23	2.48	50.63				<b>45,396.73</b>	<b>30.31%</b>
6		610.76	8,880.56	663.73	302.38	215.58	23.03	.01			<b>10,696.04</b>	<b>7.14%</b>
7		450.88	9,448.46	73.69	2.12	6.30	38.82			7.50	<b>10,027.77</b>	<b>6.70%</b>
8		113.11	974.74	163.41	134.94	162.38	1.65		124.20		<b>1,674.42</b>	<b>1.12%</b>
9		161.03	239.53	36.51	16.87	6.51	11.33	3.00			<b>474.77</b>	<b>0.32%</b>
10		226.58	750.42	65.27		4.67		2.00			<b>1,048.95</b>	<b>0.70%</b>
11		212.24	431.15	25.30		2.66					<b>671.35</b>	<b>0.45%</b>
12		1,911.57	1,125.56	79.30	298.09	1.50	73.32				<b>3,489.33</b>	<b>2.33%</b>
13		78.32	3,599.05	32.20		72.68	211.35	3.00			<b>3,996.59</b>	<b>2.67%</b>
14		15.09	19.80	112.40			200.00				<b>347.29</b>	<b>0.23%</b>
15	254.10	77.87	55.44	15.08		4.00	.75				<b>407.23</b>	<b>0.27%</b>
16		7.56		2.50		4.28	172.88				<b>187.22</b>	<b>0.13%</b>
17		81.81	173.25	349.88			1,914.70				<b>2,519.64</b>	<b>1.68%</b>
18		254.42	69.40	93.45		45.73	31.30			3.00	<b>497.29</b>	<b>0.33%</b>
19	181.50	259.60	405.48	365.43	11.84	38.55	3.20			6.75	<b>1,272.35</b>	<b>0.85%</b>
20		64.22	81.87			1.88	.45				<b>148.42</b>	<b>0.10%</b>
<b>Grand Total</b>	<b>683.10</b>	<b>5,156.24</b>	<b>129,964.74</b>	<b>4,722.73</b>	<b>2,185.19</b>	<b>4,041.90</b>	<b>2,830.77</b>	<b>8.25</b>	<b>124.20</b>	<b>51.38</b>	<b>149,768.50</b>	